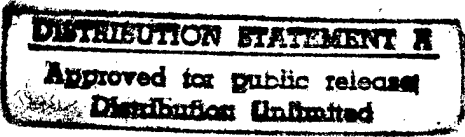
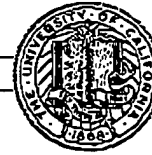


REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington, DC 20503.				
1. AGENCY USE ONLY (Leave Blank)	2. REPORT DATE 27 Jan 98	3. REPORT TYPE AND DATES COVERED Final (01 Apr 97- 31-Dec 97)		
4. TITLE AND SUBTITLE Study on Problems in Statistical Planning and Inference		5. FUNDING NUMBERS F49620-97-1-0213 AFRL-SR-BL 0184 TR-98-018		
6. AUTHORS Subir Ghosh, Department of Statistics University of California, Riverside, CA 92521		8. PERFORMING ORGANIZATION REPORT NUMBER Univ. of Missouri-Columbia Acct. No. C-532493		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) University of Missouri – Columbia Columbia, MO 65211		10. SPONSORING/MONITORING AGENCY REPORT NUMBER		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) AFOSR/NM 110 Duncan Avenue, Room B-115 Bolling Air Force Base, DC 20332-8080		11. SUPPLEMENTARY NOTES		
12a. DISTRIBUTION AVAILABILITY STATEMENT Approved for Public Release		12b. DISTRIBUTION CODE		
13. ABSTRACT (Maximum 200 words) Progress was made in estimating optimal extend of Life Testing under asymmetric loss function regime. A test was developed for exponentiality against monotone failure rates in hybrid systems. A characterization was conjectured and proved for a common and relevant family of Bivariate Exponential Distributions. Bayesian methods were successfully applied to Stress-strength configurations. "Safe-dose" methodologies were implemented that are relevant to human systems problems.				
				
14. SUBJECT TERMS Life Testing, hybrid, "safe-dose"		<div style="font-size: 2em; font-weight: bold;">19980218 048</div>		
15. NUMBER OF PAGES		16. PRICE CODE		
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL	

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO



SANTA BARBARA • SANTA CRUZ

DEPARTMENT OF STATISTICS  
FAX: (909) 787-3286

RIVERSIDE, CALIFORNIA 92521-0138

January 27, 1998

To: Dr. Jon Sjogren, AFOSR/NM  
110 Duncan Avenue, Suite B 115  
Bolling Air Force Base, DC 20332-0001

Through: Professor Asit P. Basu *Asit P. Basu by J.T. Wright*  
Department of Statistics  
University of Missouri-Columbia  
Columbia, MO 65211-5211

From: Professor Subir Ghosh *Subir Ghosh*  
Department of Statistics  
University of California  
Riverside, CA 92521

Re: Air Force Grant Subcontract No. F 49620-97-1-0213/UC  
Riverside  
University of Missouri - Columbia Account No. C-532493

Enclosed please find the final report on the above grant.

Thanks and best regards.

**Final Report**

Study on Problems in Statistical Planning and Inference

Air Force Grant Subcontract No. F 49620-97-1-0231/UC Riverside

University of Missouri – Columbia Account No.C-532493

Principal Investigator: Subir Ghosh, Department of Statistics

University of California, Riverside, CA 92521-0138

Program Manager: Dr. Jon Sjogren

**Research Done****Published Articles:**

1. Ghosh, S. and Lai, C-L. (1997). Measuring influence of observations in prediction and estimation for central composite designs. Communications in Statistics, Simulation and Computation, 26(1), 233-257.

**Accepted for Publications**

- 1.. Ghosh,S. and Liu, T. (1997). On an optimization problem in comparing mixture designs. Journal of Combinatorics, Information and System Sciences, (13 pages).
2. Ghosh,S. and Liu,T. (1997). Determining an optimal performance condition in a mixture experiment. Frontiers in Reliability ( A.P.Basu, ed.), World Scientific Publishing Co., (17 pages).
3. Ghosh,S. and Lopez, L.A. (1997). Evaluating statistical methods practiced in two important areas of quality improvement. Quality Improvement Through Statistical Methods ( B. Abraham, ed.), Birkhauser Boston, Inc, (12 pages).

**Submitted Publications:**

1. Ghosh,S. and Fairchild, L.D. (1997). A new ANOVA and ANOCOVA for two-period crossover trial data,( 32 pages).
2. Ghosh,S. and Fairchild, L.D. (1997). Testing interactions between treatments and subgroups within groups in a two-period crossover trial, (42 pages).
3. Ghosh,S. (1997). Designing propulsion reliability of space launch vehicles, (20 pages).

**Interaction with the Phillips Lab, Edward Air Force Base**

Summer Research Faculty during July, 1997- September, 1997 for 10 weeks.

**Invited Speaker**

1. Conference on Recent Advances in Statistics and Probability, Indian Statistical Institute, Calcutta, and the Bernoulli Society for Mathematical Statistics and Probability, December 29, 1997 – January 1, 1998.
2. Third International Triennial Calcutta Symposium on Probability and Statistics, Calcutta University, December 26-28, 1997.